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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/624,424

07/21/2003

Thomas J. Holman

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09/06/2006

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EXAMINER

ABRAHAM, ESAW T

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,424

Applicant(s)

HOLMAN, THOMAS J.

Examiner

Esaw T. Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 7-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/07/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-6 are presented for examination.

Information Disclosure Statement

2. The references listed in the information disclosure statement submitted on 02/07/05 have been considered by the examiner (see attached PTO-1449).

Specification

3. The disclosure is objected to because of the following informalities:

a) The listing of paragraph numbers [0001-00021] do not match with the disclosure paragraphs: For example; see the paragraph numbers of pages 1, 4-6 and 11.

b) The applicant is requested to follow the following guidelines as provided in 37 CFR 1.77(b), and the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT

(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5)

and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825).

A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

c) Applicant is reminded of the proper content of an **abstract** of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;

(3) if a chemical compound, its identity and use;

(4) if a mixture, its ingredients;

(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Correction is required.

Claim Rejections - 35 USC § 101, Non Statutory

4. Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because: the claimed invention is directed to non-statutory subject matter.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. There is no limitation in claim 1 that even suggest that any hardware is required to carry out the limitations in claim 1 since adjacent symbols (data symbols and parity symbols) or codeword can be generated using a generator matrix and since claim 1 does not recite any step for transmitting over a channel requiring hardware for transmitting. Hence claim 1 is non-statutory since all of the limitations in claim 1 can be carried out **by hand or in a computer program**.

Claims 2-6 which are directly or indirectly dependents of claim 1 are also objected under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims' **1, 2 and 6** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "adjacent symbol of codeword formed by generating a first and second symbols during a first clock phase and generating the first and second symbols during a second clock phase" it is unclear how the generation of symbols affect to form the adjacent codeword.

Claim 2 recites, "the first and second set of data is from a memory". It is not clear what the applicant meant "from a memory". Further it is not clear if the set of data are read or write or stored...etc in the memory.

Claim 6 recites "isolating a common mode error across the m and n bits". It is unclear how the common mode error is isolated. Furthermore, it is unclear the relationship between the method of isolating common mode errors and the formation of the adjacent symbol codeword.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere CO.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zook (U.S. PN: 6,662,336) in view of Sastry et al. (U.S. PN: 5,987,629).

As per claim 1:

Zook teaches or discloses an error correction coding techniques are typically employed for digital data that is transmitted on a channel or stored/retrieved with respect to a storage device (such as, for example, an optical disk drive or magnetic media drive). With error correction coding, the data to be transmitted or stored is processed to obtain additional data symbols (called check symbols or redundancy symbols) which the data (first set of data) and check symbols (second set of data) together comprise codeword and after transmission or retrieval, the codeword is mathematically processed to obtain error syndromes which contain information about locations and values of errors (see col. 1, lines 15-25). Zook further teaches that for each codeword, each of the twenty error locator iterations is performed in two phases and as shown in FIG. 9A, in the first phase [Phase A], the fast correction subsystem (60) basically performs such activities as (1) generating a current discrepancy quantity in accumulator & auxiliary multiplier (102); and (2) updating the contents of the registers (130) according to the foregoing recursion rule for Phase A. In this regard, in

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the first clock of phase A, inner product circuit (162L) outputs bit 3 of the contribution and inner product circuit (162H) outputs bit 7 of the contribution. On the second clock of phase A, inner product circuit (162L) outputs bit 2 of the contribution and inner product circuit (162H) outputs bit 6 of the contribution (see col. 22, last paragraph).

Zook does not explicitly teach an adjacent symbol codeword formed from two clock phases. **However**, Sastry et al. in an analogous art teach an apparatus and a method for efficiently detecting and localizing faults in a packet switched network, which uses a status message-based link control protocol (see col. 2, lines 25-54). Sastry et al. teach that sending the status message (first set of data) during a first clock phase and the corresponding one bit parity check code during a second clock phase (second set of data) over the same physical link (see Col. 7, lines 7-14). **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings of Zook to include a method of forming a codeword (data and error detection codes) from two clock phases as taught by Sastry et al. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to isolate faults occurring in non-physical links as well in networks using radio links or any other non-wired link (see col. 7, lines 10-14).

As in claims 2-3:

Zook teaches that an error correction coding techniques are typically employed for digital data that is transmitted on a channel or stored/retrieved with respect to a storage device (memory) (such as, for example, an optical disk drive or magnetic

media drive) and with error correction coding, the data to be transmitted or stored is processed to obtain additional data symbols (called check symbols or redundancy symbols) which the data and check symbols together comprise a codeword.

As per claim 5:

Zook teaches or discloses an error correction coding techniques are typically employed for digital data that is transmitted on a channel or stored/retrieved with respect to a storage device (such as, for example, an optical disk drive or magnetic media drive). With error correction coding, the data to be transmitted or stored is processed to obtain additional data symbols (called check symbols or redundancy symbols). The data (first set of data) and check symbols (second set of data) together comprise codeword and after transmission or retrieval, the codeword is mathematically processed to obtain error syndromes, which contain information about locations and values of errors (see col. 1, lines 15-25).

As per claim 6:

Sastry et al. teach that a fault detection and localization scheme of the present invention can isolate faults occurring in non-physical links as well, for example in networks using radio links or any other non-wired link (see col. 7, lines 10-14).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


US PN: 6,981,196 Davis et al.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for after final communications.

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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